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6. A method of manufacturing an integrated heat spreader, comprising:

generating a finite element model of a package having a substrate connected to a die connected to the integrated heat spreader connected to a heat sink;

executing the finite element model to generate the integrated heat spreader with a shape having deformations;

altering the shape of the integrated heat spreader to compensate for the deformations;

executing the finite element model using the integrated heat spreader having an altered shape to compensate for the deformations; and

repeating the altering of the shape of the integrated heat spreader to compensate for the deformations and execution of the finite element model until no further deformations exist.

7. The method recited in claim 6, wherein the generating a finite element model of a package further comprises:

dividing the substrate, the die, the integrated heat spreader, and the heat sink into a plurality of elements having a certain spatial coordinate and connected to other elements of the plurality of elements.

8. The method recited in claim 7, further comprising:

associating properties with the each of the elements of the plurality of elements, wherein the properties comprise mechanical and thermal properties, wherein thermal properties comprise coefficients of thermal expansion.

9. The method recited in claim 8, wherein the deformations are due to the physical manipulation of the integrated heat spreader or heat absorption by the integrated heat spreader generated by the die.

10. The method recited in claim 9, further comprising:

identifying hotspots on the die;

determining an associated elements on the integrated heat spreader for the hotspots on the die; and

modifying the heat spreader geometry to decrease local thermal resistance in the associated elements on the integrated heat spreader.

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16. A computer program embodied on a computer readable medium and executable by a computer for manufacturing an integrated heat spreader, comprising:

generating a finite element model of a package having a substrate connected to a die connected to the integrated heat spreader connected to a heat sink;

executing the finite element model to generate the integrated heat spreader with a shape having deformations;

altering the shape of the integrated heat spreader to compensate for the deformations;

executing the finite element model using the integrated heat spreader having an altered shape to compensate for the deformations; and

repeating the altering of the shape of the integrated heat spreader to compensate for the deformations and execution of the finite element model until no further deformations exist.

17. The computer program recited in claim 16, wherein the generating a finite element model of a package further comprises:

dividing the substrate, the die, the integrated heat spreader, and the heat sink into a plurality of elements having a certain spatial coordinate and connected to other elements of the plurality of elements.

18. The computer program recited in claim 17, further comprising:

associating properties with the each of the elements of the plurality of elements, wherein the properties comprise coefficients of thermal expansion.

19. The computer program recited in claim 18, wherein the deformations are due to (a) the physical manipulation of the integrated heat spreader (b) heat absorption by the integrated heat spreader generated by the die (c) non isothermal processing conditions for the package, coupled with differing coefficients of thermal expansion for the package materials.

20. The computer program recited in claim 19, further comprising:

identifying hotspots on the die;

determining an associated elements on the integrated heat spreader for the hotspots on the die; and

modifying the local geometry of the associative elements on the integrated heat spreader in order to reduce local thermal resistance.

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